Assignment 1

Que2. Write a simple Matrix Multiplication program for a given NxN matrix in any two of your preferred Languages from the following listed buckets, where N is iterated through the set of values 64, 128, 256, 512 and 1024. N can either be hardcoded or specified as input. Consider two cases (a) Elements of matrix are of data type Integer and (b) Double In each case, (i.e. Bucket 1 for (a) and (b) + Bucket 2 for (a) and(b))

Bucket2: Python

- a. Report the output of the 'time' describing the system and CPU times.

  Execution ie, **System** times for matrix multiplication where N and Elements are as follows:

N	Elements are Integers	Elements are Doubles
64	0.000408 seconds	0.000200
128	0.003489 seconds	0.000259
256	0.029157 seconds	0.001319
512	0.462358 seconds	0.010039
1024	5.321035 seconds	0.122137

  CPU Time is real time that computer spends to execute the main code (here, matrix multiplication code) whereas, **System Time is** total time that computer take to run whole program it may, memory allocation, various other operations like input/output and variables assignation.

  So, **CPU** takes less time than **System.**

- b. Using the 'language hooks' evaluate the execution time for the meat portions of the program and how much proportion is it w.r.t. total program execution time.
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